

THE OUTLOOK



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Mrs. Mildred Harris

First Iowan Frozen

14th Verified Patient

Sep. 20, 1970, Des Moines

DR. PETER GOURAS
SUGGESTS NEW PROTOCOL
FOR CRYONIC SUSPENSION
Summarized by Art Quaife



Dr. Peter Gouras

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MRS. MILDRED HARRIS

Mrs. Mildred Harris, the first patient to be frozen in Iowa, "died" Sunday, Sep. 20 in Des Moines, creating another emergency situation and emphasizing some old lessons.

Mrs. Harris' sons, Terry and Dennis, had been in touch with the Cryonics Societies of New York, Michigan, and California for about a week. I had warned them immediately that, in our experience, death almost always comes sooner than expected, often much sooner. (Mrs. Harris was terminally ill with bone cancer.) Arrangements were under way; Mrs. Harris had signed legal documents including a codicil to her will, in the presence of her attorney, and Robert F. Nelson had arrived in Des Moines Friday, representing CSC and Cryonic Interment, Inc., with whom the Harris family had decided to make their arrangements. But on Sunday Mrs. Harris began sinking rapidly--even though several weeks more had been predicted by her physician--and the physical arrangements were incomplete, with no perfusion chemicals on hand.

Bob Nelson called me from Des Moines about 11:00 A.M. to report this, and to ask if we could send the chemicals CSM had on hand--DMSO and Ringer's solution. It turned out that air freight was not available until the next day, so I agreed to fly there myself and bring the chemicals as baggage.

While preparations were being made, the call came that Mrs. Harris had died, and had been immediately packed in ice. (She died at home, and the registered nurse in attendance was given permission to make the determination of death; apparently the physician can delegate this authority in appropriate situations, at least in Iowa.)

Walter Runkel and family had pitched in with their usual reliability and efficiency, and packed most of the chemicals in six suitcases. By 4:00 P.M. I was on the way, and arrived in Des Moines about 8:00. Last to arrive was Joseph Klockgether of the Renaker Mortuary in Buena Park, California, one of the two most experienced men in cryonic perfusion. The perfusion was done by him, with the help of Mr. Nelson and myself, taking most of the night. By about 4:00 A.M. the patient was packed in dry ice. This was in the embalming room of Arnold's Highland Park Funeral Home, with the cooperation of its director, Mr. Robert Major.

On Monday there was a funeral service, with the casket closed to protect the patient against warmth and to avoid upsetting relatives. Several relatives were strongly opposed to cryonic suspension, and the sons, Terry and Dennis, had to cope with them in trying circumstances including great fatigue, since they and Bob Nelson had had little sleep for three days while they tried to complete the arrangements. But the sons held firm, speaking patiently and reasonably with the relatives; and they had the backing of Mrs. Harris' attorney that this was indeed her wish. (She had not mentioned it to any relatives but her sons, thinking to spare them disturbance.) In a letter dated two days later, I am glad to say, Terry Harris tells me that some of the relatives have

become more understanding and sympathetic.

Tuesday morning the patient was sent to California, where she is being kept in the facility of Cryonic Interment, Inc. in a cemetery near Los Angeles. At a press conference that morning--to which the Harris sons had agreed to help further the program--information was given to the Des Moines Tribune and the Des Moines Register, which ran extensive and generally objective articles, although many of the usual inaccuracies were present. There was also an Associated Press story on the wires.

Among the lessons to be learned by the general public from this case, and by Society members, is the very simple but still largely ignored one of advance preparation. Mrs. Harris had known of cryonics for some time, but no steps had been taken until it was clear she was dying; fortunately, she and her sons were strong enough to carry it off under these circumstances, but most people are not.

Among lessons to be learned by the leaders of the Societies are several technical ones involving preparation and perfusion, most of which cannot be detailed here. But it is clear, for example, that we should have at least enough chemicals for one perfusion always packed and ready for air shipment. This is not easy, even in terms of expense, but we should soon have this, in addition to our local stand-by stock.

At any rate, another potential immortal is waiting her chance, and we salute her courage and her sons', as well as the skill and strength, demonstrated yet again, of Bob Nelson and Joe Klockgether. On another pleasant note, we hear that Terry and Dennis Harris may organize a Cryonics Society in Des Moines. Much success!

R.C.W.E.

DR. PETER GOURAS' NEW PROTOCOL

by Art Quaife
(Bay Area Cryonics Society)

The writer has been corresponding with Dr. Peter Gouras, of the National Institutes of Health, about the need for a standardized procedure for perfusing and freezing a human patient. Dr. Gouras has graciously agreed to prepare such a protocol, and a preliminary version is now available. In brief outline, he recommends that perfusion take place as follows:

1. Cool the body as rapidly as possible to $1-2^{\circ}\text{C}$. Cardiac compression and oxygen therapy should not be used if it delays the cooling process in any way. Even if it doesn't, he believes that in most cases it may prove more harmful than helpful. Recovery of the brain from blood deprivation of over an hour has been demonstrated, but a small flow of blood to such a brain may simply produce swelling.
2. The body should now be perfused with 20% DMSO in Ringer's solution, with heparin and probably dextran added. He recommends large quantities of perfusate (5 liters per kilogram of body weight) to minimize dilution of DMSO by body water. At this low perfusion temperature, toxic effects of DMSO are minimized.
3. A second perfusion should now be performed, using 40% DMSO and the same volume of perfusate. The resulting concentration in the body should now be about 35% DMSO. The body can now be cooled to about -20°C without any freezing of body water.
4. For the purpose of depressing the freezing point as far as possible, the ideal concentration of DMSO is about 60%. Such a solution cannot easily be perfused,

due to its high viscosity and to vascular resistance at this low temperature. Instead, Dr. Gouras recommends a "diffusion method." The body is placed in a vat of DMSO solution; the concentration is gradually increased to 60% while temperature is simultaneously lowered. The temperature is always kept above the level where any freezing can take place. To carry out this part of the procedure optimally, we need to know how long it takes for known concentrations of DMSO to penetrate completely to the body interior, and especially to the brain. Dr. Gouras suggests that the Cryonics Societies should support research to determine the time required for such diffusion. If this time is not too long, the whole process of perfusion, with all of its technical difficulties, can conceivably be eliminated, and the whole procedure carried out by the diffusion method.

5. When the body has equilibrated to 60% DMSO, the temperature can be lowered to about -136°C without any freezing of body water! He considers it an open question as to whether to proceed further to liquid nitrogen temperature (-196°C), which will cause some crystallization to take place, with consequent biological damage.

The most remarkable feature of his method is the high terminal concentration of DMSO used. The justification is that using such concentrations prevents any freezing from taking place until a very low temperature. The toxic effects of these levels of DMSO on body cells remain a problem, but are minimized by introducing them to the body at the lowest possible temperatures.

The preliminary protocol has been distributed to a number of cryonists and other scientists,

inviting comment. After all criticism offered has been reviewed, a finalized version will be made generally available. Dr. Gouras has also agreed to discuss his procedure at next year's Cryonics Conference.

There has been some discussion among the leaders of the Cryonics Societies about publishing a booklet on "The Scientific Basis for Cryonics." If essential agreement can be reached on the value of Dr. Gouras' procedure, it would make an ideal focus for such a booklet, accompanied by some of the references he cites to support his approach.

Editor's note:

Dr. Gouras is a member of the Scientific Advisory Council of the Cryonics Societies of America. His original research includes studies of DMSO toxicity and of recovery after ischemia, both using the cat retina. He has succeeded in showing that recovery is possible after much longer periods of ischemia than previously believed. As to his suggested new protocol, it is emphasized that it is tentative, with many important questions yet to be answered. As of this writing, there is no agreement, and Mr. Quaife has made calculations tending to show that the diffusion method of permeating the body with DMSO would be too slow; there are also questions about the DMSO-water eutectic, and others. (But the lay reader should remember that many dramatic freeze-thaw successes have occurred; we are concerned with reducing damage still further, eventually to zero.)

OTTO INITIATES NEWSLETTER

Albert Stuart Otto, a California journalist, author, and lecturer, has published the first number of

The Immortality Newsletter. (Address P.O. Box 696, San Marcos, Cal. 92069, \$2/year.)

Mr. Otto says, "This is the first issue of a periodical whose growth, it is hoped, will parallel that of the relatively new field it is established to serve--the field of anti-death thought and research." He goes on to mention "four fronts" along which work is proceeding: medical, engineering, socio-psychological, and spiritual.

As mentioned last month, Mr. Otto's lectures lean more heavily on the spiritual side, and one of the quotations framing the banner of the newsletter is from John 8:51: "If a man keep my saying, he shall never see death." The other banner quotation is Alan Harrington's: "Death is an imposition on the human race, and no longer acceptable."

Mr. Otto is aware of the work being done by the cryonics societies, and supports it; he hopes to work with us, although with a different emphasis.

BOOK REVIEW

We belatedly comment on How to Conquer Physical Death, by Friend Stuart, Dominion Press, San Marcos, California, 1968.

Our first reaction was entirely negative--the material seemed to be only a hodge-podge of vague speculation and wishful thinking, in some respects on the order of Christian Science. A second look has tempered this judgement. It still seems to us grossly lacking in clarity and verifiability; yet this is typical of "spiritual" discussions, which nevertheless may have some useful content. It is also important to remember that, even when a primary message is fallacious, the discussion may contain secondary or partial truths

of considerable value. The alchemists and the yogis--to mention only two such classes--both did work of real value, even though their reports were confused and confusing. Without wishing to sound patronizing or make invidious comparisons, a somewhat similar feeling will be evoked in some people by this book.

The primary message intended here seems to be an extension of the Christian Science thesis, viz., that understanding and acceptance of the teaching of Jesus--with a particular, subtle interpretation--will free one of disease and defect, including death, and allow one to realize the eternal life and godliness that are already built into us.

If such a program is feasible, the obvious question is, why hasn't it worked? The author says it has: "The immortals are here...The number of such individuals is relatively small at present, but they walk among us..." No evidence is offered, and the author does not say to what extent he himself believes he has succeeded; to our mind, this destroys the credibility of the main thesis.

Yet the fact remains that many truths are exceedingly difficult to prove and many subtleties hard to grasp. The writing is coherent (on its own terms), intelligent, often witty; the bible lore and its interpretation contain some interesting surprises. (We would offer some direct quotations, except that most of the short ones require context.)

Few will believe that we can cure senile debility by the direct action of our minds on our bodies. Yet serious scientists, as well as yogis, have trained people to control their own heartbeat, blood pressure, and even brain waves.

Uneasiness about language and philosophical context should not close our minds to the possibility of even further control.

ANOTHER BELATED BOOK REVIEW

In God's Image (by Jacob Rosin, Philosophical Library, 1969) ironically enough is written by a scientist with primarily a scientific viewpoint, while Friend Stuart's spiritually oriented book refers in the title to physical death.

Dr. Rosin, according to the book jacket, at that time was Director of Research of the Montrose Chemical Division, Chris-Craft Industries, Inc. His book appears to be a rather unusual blending of science and religion, and indeed his last chapter is called "The Ultimate Reconciliation Between Science and Religion." The strangest feature is the claim that we will inevitably become not only immortal supermen (homo sempervirens) but actually omniscient and omnipotent.

This claim is based on the author's "third principle of the science of prophecy", viz., "Anything which is theoretically possible will be achieved." Needless to say, neither this "principle" nor its alleged corollary is really proven, and some will be put off by the overblown assertions. Nevertheless, there is much valid argument and useful polemical material, and while most of it is familiar to cryonicists, it offers some fairly interesting variations on our familiar themes.

CLINICAL GENETIC ENGINEERING

The Washington Star reports an attempt under way in Germany, with the help of the American A.E.C., to cure a congenital disease in two little girls by infecting them with a virus to change their heredity.

The disease is called "arginemia", an excess of an amino acid called "arginine". Arginine is ordinarily used to build protein and consumed by the body, but this requires the help of an enzyme, arginase, which is manufactured in the body at the direction of a special gene or DNA molecule. In these patients, the gene is lacking, apparently due to accidental combination of recessive defects in the parents. The arginine build-up has already resulted in mental retardation and partial paralysis of the children.

Dr. Stanfield Rogers, of the Atomic Energy Commission's laboratory at Oak Ridge, has been able to prepare a harmless form of a special virus--the Shope virus--that contains the needed gene. By infecting the patients with this virus, it is expected the missing gene can be supplied to the body cells, raising the arginase level and reducing the excess of arginine. If successful, this will amount to correction of an hereditary defect at the source. With these particular patients only limited improvement can be expected, since too much damage has already been done, but it is an important beginning.

Eventually, similar techniques should be available to correct any genetic defect; and beyond that, to improve normal heredity and build supermen, in conjunction with other means.

DOLINOFF TO VISIT NEGOVSKI

Anatole Dolinoff, President of the Cryonics Society of France, has been corresponding with Professor Vladimir Negovski, the world-famous leader in resuscitation research. (M. Dolinoff speaks Russian.) Prof. Negovski has shown lively interest in cryonics, and is allowing the Bulletin of the French society to publish some of his papers. On August 6, 1971, M. Dolinoff will visit Negovski in his laboratory at

the Soviet Union Academy of Medicine. This is all the more remarkable, considering that a communist country--or any totalitarian country--seems nearly certain to take a dim view of cryonics, when it comes to their official attention. Still, so far so good, and it has often been said that perhaps one of the things we need is communist competition--a "freezer gap" that will galvanize our own institutions into action. We also remember that there is a long Russian tradition in radical medicine, including research in reversal of aging.

Dolinoff and his European colleagues also continue active on other fronts, with considerable new publicity and energetic work toward establishment of the European Cryonics Corporation, headed by himself with Jorge Blaschke of Spain, Rudolf Burkhart of Germany, Dr. Ernst Fasan of Austria, and Brian Blair Giles of Britain. Our next issue will probably carry more details along these lines.

NEW YORK SEMINAR

On October 3 the Cryonics Society of New York offered a seminar in Manhattan, with public admission at \$2. The program included:

"Introduction to Cryonics", by Donald Godduhn.

"Programming for Immortality", by Saul Kent.

Audio-visual presentation of Cryo-Span's Human Preservation Center.

Audience participation symposium.

WHAT PRICE DMSO?

Since 1967, the price of reagent grade DMSO has risen from \$18.50 per three-kilogram bottle to about \$30. Inflation? Change in supply and demand? We don't know. But if Dr. Gouras' suggested protocol is

adopted, even without the third phase of immersion-diffusion, the cost of DMSO for a 110 pound woman would be about \$1,500, and for a larger person proportionately more. (The method would also require about \$525 worth of Ringer's solution, at about \$1.50 per liter.) This would substantially increase the total cost, although not by an impossible factor, since the trust fund for maintenance and rehabilitation would remain the largest item. But it ought to be possible to modify Dr. Gouras' method to save chemicals by recirculation, and for the time being, at least, we are planning to do this.

Incidentally, someone should study the question of large-scale availability of DMSO, when large numbers of people join the program. Since it can be made as a by-product of wood pulp, the supply is probably essentially unlimited, but someone should check on this.

MAE JUNOD SIDELINED BY SURGERY

Mrs. Mae Junod, chairman of the editorial board of THE OUTLOOK, underwent abdominal surgery at St. John's Hospital in Detroit the morning of Oct. 12. Her friends will be relieved to know she is doing well, and should be back in action next month.

Although the risk of death was considered minimal, routine precautions were taken, since major surgery always carries some risk. Her physician was acquainted with emergency cryonic suspension procedure, and was amenable. Her daughters, Mrs. Bonnie Delor and Mrs. Patricia Tanghe, were at the hospital; they and the physicians had both written and verbal information on procedures. Members of the Society were in touch and alerted, and in an emergency the CSM van would have been at the hospital before resuscitation attempts ended.....Get well soon, Mae. We need you!

ROY YATES: HOW TO RUN AWAY FROM A PROBLEM

Mr. Yates' talk at the 1970 Conference ended with the following advice for evading a problem. Credited to Paul B. Diederich of Educational Testing Service, Princeton, New Jersey, it applies not only to educational problems but many others, including some of those of cryonics. In particular, Mr. Yates hopes that we will stop evading the necessity of a national cryonics organization. (We have abridged it a little.)

1. Find a scapegoat and ride him. Teachers can blame administrators, administrators can blame teachers, both can blame parents, and everyone can blame the system.
2. Profess not to have THE answer. That lets you out of having any answer.
3. Say that we must not move too rapidly. That avoids the necessity of getting things started.
4. For every proposal, set up an opposite and conclude that the "middle ground" (no motion whatever) represents the wisest course.
5. Point out that an attempt to reach a conclusion is only a futile "quest for certainty". Doubt and indecision promote growth.
6. When in a tight place, say something the group cannot understand.
7. Look slightly embarrassed when the problem is brought up. Hint that it is in bad taste, or too elementary for mature consideration, or that any discussion of it is likely to be misinterpreted by outsiders.
8. Say that the problem cannot be separated from other problems. Therefore, no problem can be solved until all other problems have been.
9. Rationalize the status quo; there is much to be said for it.
10. Point out that those who see the problem do so because they are unhappy, rather than vice versa.
11. Ask what is meant by the question. When it is sufficiently clarified, there will be no time left for the answer.
14. Move away from the problem into endless discussions of various ways to study it.
16. Retreat into general objectives on which everyone can agree. From this higher ground you will either see that the problem has solved itself, or you will forget it.
20. Explain and clarify over and over again what you have already said.
22. Appoint a committee.. pros and cons...tentative conclusions... bases for further discussions...initial postulates...methods of approach.
27. Be thankful for the problem. It has stimulated our thinking and thereby contributed to our growth. It should get a medal.